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AUTHOR Fyans, Leslie J., Jr.; Maehr, Martin L.
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ABSTRACT

This study deals with attributional theory, a factor of special concern in achievement theory, which focuses on specific behavior as caused by the subject's attributions to the perceived causes of such behavior. This study investigated whether an individual's attributional biases were predictive of task selections he or she made. Furthermore, it investigated the influence of task outcome, grade level, sex, and sociocultural identification upon the relationship between attribution and task selection. A total of 743 students from fifth through twelfth grades participated in the study. The students were drawn from both rural and urban school systems. A specially composed questionaire was employed to assess the students' attributions. Each item described a performance outcome for which the student would attribute the cause: to ability, to effort, or to luck. After the assessment, each subject was presented with three identical games. They were told that in one game you do best by trying hard, in another by knowing what to do, and in the last by being lucky. Subjects selected their first and second choices. It was found that subjects who believe their own success on achievement tasks are attributable either to their own ability, effort, or to luck will likely seek tasks which are compatible with such beliefs. This general tendency is relatively unaffected by experience of success or failure at a task and generalizes across age, sex, and sociocultural groups. (Author/JK)

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Attributional Style and Task Selection: A Dynamic Perspective on Personality x Situation Interactions[1]

Leslie J. Fyans, Jr.
Illinois Office of Education[2]

Martin L. Maehr
University of Illinois, Urbana-Champaign

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Running Head: Attributional Style

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Attributional Style and Task Selection: A Dynamic Perspective on Personality x Situation Interactions

The recurring debate (cf. Allport, 1966) of the relative importance of personality traits versus situational conditions has erupted anew--and with special fervor--in the writings of Alker (1972), Argyle and Little (1972), Bem (1972), Mischel (1968, 1969, 1973) and others. Not surprisingly, the current form of this debate has been accompanied by the suggestion that the critical determinants of an individual's behavior in a situation is a product of the interaction of personality and situational factors. At first blush, this appears to be an attractive compromise of antagonistic positions, one which promises a prompt resolution of the arguments. As attractive as this suggestion may be, its implications have not been fully realized as yet. For the most part, the interactionist position has found form in studies which tend to focus on the reaction of a person, typed in some way, to some available or imposed situation. This hardly does justice to persons as we observe them in most social situations. As Endler and Magnussen (1976; Magnussen and Endler, 1977) and Overton and Reese (1972) have pointed out, what is needed is an organismic model which treats persons as active not reactive, and as spontaneous and goal directed. It is in this regard that the suggestion of Stagner (1974; 1976) may well prove most helpful.

Briefly, in reconceptualizing the interactionist position from an organismic/dynamic viewpoint, Stagner has stressed the importance of self-selection. That is, he emphasized the salient fact that persons characteristically seek out situations as well as react to them. They are not merely responsive to compatible and complementary conditions which happen to be imposed. When permitted, they

not only select situations and conditions which accord with their preferences, but also seek to create the desired situations and conditions. This possibility doubtless has broad relevance in the understanding of social behavior. Nowhere, however, is it more relevant than in the case of achievement. Particularly in the attempt to understand the development of a continuing motivation (Maehr, 1976) toward a task, typically requisite to accomplishing something of significance, is this especially so. One might well expect that such continuing motivation in the performance of a task, persistent effort and resultant achievement, is in most life situations a function of a self-selection tendency. On the one hand, individuals who would put forth achievement effort, independently and on thier own, are likely to be those who believe in the power of such effort. On the other hand, it is possibly also true that these individuals are not likely to waste their time with situations where their ability and effort does not pay off. That is, they should exhibit a self-selection bias in favor of task situations where success is perceived to be a function of their own behavior rather than a function of external factors, such as luck. It seems reasonable, then, to hypothesize that an individual's attributional biases will lead to certain selections of situations in which to perform. Those who believe that they are personally responsible for succeeding are likely to prefer and seek out tasks and situations where success is most self-evidently a function of personal ability and effort. Conversely, those who tend to hold that success is largely a function of factors over which they have little or no control will exhibit a preference for tasks where the importance of personal ability and effort are minimized--e.g., games of chance.

There is, of course, already some evidence that individuals with one or another achievement orientation do have a selection bias more or less along these lines. In particular, we would note that the tendency to attribute causation internally appears to be related to the tendency to elect to return on one's own to work on achievement tasks (Salili, Maehr, Sorenson, Fyans, 1976). Doing tasks at one's own initiative and on one's own time seems to be basic to long-term achievement. Conceivably, the tendency to do this is a product of certain attributional biases (the belief that one's effort and ability will prove successful) and an associated tendency to work on tasks where such beliefs about causation are warranted. Thus, persons who attribute success to their own ability, effort, or to luck are likely to exhibit different task preferences. This in turn is a likely basis for significant accomplishment and an achieving career. That is the essential rationale for the present study.

The more immediate purpose of this study is to investigate whether persons who attribute success differentially to their own ability, effort or luck do indeed exhibit varying task preferences.[3] The current importance of attribution theory in the understanding of social interaction in itself suggests that an investigation of personality x situation interactions involving attribution would be worthwhile. However, it is in the context of trying to understand the continued effort directed toward achievement, especially on the part of some, that this issue takes on special importance. The purpose of the study is, then, to study whether an individual's attributional biases are predictive of and antecedent to task selections he or she makes. Furthermore, the study investigates the influence of task outcome, grade level, sex, and sociocultural identification upon the relationship between attribution and task selections. Clearly, each of these factors is likely to affect attributional processes (cf. Salili, Maehr,

and Gillmore, 1976; Salili, Maehr, and Fyans, Note 1). The question is, do such factors also modify any self-selection biases. In outline, three major research questions guided the investigation.

(1) The first research question was a congruence question: How well can task selection be predicted from an individuals attributions? One would expect good prediction if the attributions and selections were congruent.

(2) The second question was the consistency question. The major interest here was--will this match-up (or congruence) between attributions and task selections occur repeatedly? Also of importance here is the influence of outcome (success or failure) in the performance on the task upon subsequent levels of congruence.

(3) The final question was the generalizability question. This question was concerned with whether or not the level of congruence would be stable across educational levels (5th through 12th grades) sexes, and socially diverse (rural and urban) groups.

Method

Subjects

A total of 743 students in grade levels ranging from 5th through 12th grades participated in this study. The students were from 7 different schools: 3 elementary, 3 junior high, and 1 senior high school. To further facilitate the investigation of the generalizability of this study's results across differing social groups, the students were drawn from both a predominantly rural school system and from an urban school district. Table 1 presents the samples of subjects taken from each grade level, their sex, and urban/rural background.

Insert Table 1 about here

Materials

Causal Attribution Questionnaire. A specially composed questionnaire, based on such measures as the IAR (Crandall, Katkovsky, and Crandall, 1965), was employed to assess the students' attributions. Each item had a stem describing a performance outcome for which the student would attribute the cause. Following the stem were three phrases each containg an attribution; (to ability, to effort, or to task-difficulty-luck). The task difficulty-luck attribution were meshed since pretesting indicated no ascriptions to luck alone. One of the items is presented below as an example.

When you do well on a test at school, is it more likely to be:

a. because you study for it,

b. because you are smart,

c. because you are lucky and got an easy test.

There were five items describing successful outcomes and five items depicting failure outcomes. Both failure and success stems and attributional phrases within stems were counterbalanced to insure against order effects. The students were asked to complete the sentences by relating the attributional phrase "they liked best." They were told there were no right or wrong answers for the questions and that their teachers would not see thier papers.

Procedure

Assessment of Attributional Style. Subjects were administered the forced-choice attribution questionnaire and the picture-completure measure to assess their attributional style in classroom settings. All assessment measures were administered by a twenty-two year male graduate student.

The following explanations were given to all groups:

"My name is_____ and I'm here today because I'm interested in what

students your age think about some things. I wrote some questions here (showing questionnaire) and your answers will give me the information I need. Here are some sentences to finish and some questions to answer. Decide which sentence is most like you and draw a circle around it. This is not a test; your teacher will not see your papers, so there are no wrong answers. You can choose the answer that is most like what you think and draw a circle around it. (Pass out the questionnaires). You will have about 15 minutes. Now you can begin."

Task Self-Selection. Two weeks after the assessment of their attributions, an experimenter took each subject individually to a room, introduced himself (or herself), and presented the subject with three boxes. Each box contained identical angle matching tasks which required the subject to match an angle printed on a card to one of the five remaining angles. In actuality none of the angles matched exactly.

The instructions given to each child were as follows:

"I have brought you to this room so you could play some games. Here are three boxes (point to boxes); each box has a game in it. No one game is harder than the others. (Experimenter points to each game as he explains starting at left). In this game you do best by trying hard. In this game you do best by knowing what to do. In this game you do best because you are lucky.

In the game you choose, I will put 5 cards on the table in front of you. Then I will give you one more card. You should find one of the cards in front of you that matches the last card, but you cannot put your card down beside the others or move them in any way. After you choose a game, I'll open the box and you can play. Now you can choose a game."

The student was then asked to select which of the remaining games he liked second best. The experimenter recorded the student's choices, opened the box chosen first, and removed the other two boxes.

The students were randomly assigned success or failure independent of their performance upon the angle matching task. If they were to receive success they were told "That's good; you have done very well." If they were assigned failure they were told "That's bad; you have not done very well."

The experimenter then replaced the cards in the box, removed it, and put 3 new boxes on the table. The instructions were the same as with the first presentation. Again the subjects gave their first and second choices. The experimenter recorded the student's two choices; he then opened the box chosen first while removing the other two boxes. Following this the students were all assigned success relative to the angle matching performance. The experimenter took the student back to his (or her) classroom.

Eight experimenters, were used to collect the situation self-selection data. To insure against variability in the instructions of procedures, each experimenter participated in five concentrated training sessions. As evidence of the effective training sessions, no significant differences between the data obtained among any of the eight experimenters were found. Of course, experimenters were not given any prior information on the purposes of the study nor were they aware of subjects scores on the attribution measures.

Analyses

Congruency. While each student selected two games, there were three possible groupings of games which could be matched with success-attributions. Thus, there were three prediction situations in which to predict selections from attributions. One prediction situation was the first game selected by each student. However, before the second game selection, each student was assigned success or failure. Thus, there were two possible prediction situations of second selections: those selections of students assigned success outcomes and those selections of students assigned failure. The degree of predictive association between attributions and selections was ascertained through the use of the statistic lambda as described by Hays (1973). The interpretation of lambda is analogous to the interpretation of a coefficient of determination (r^2xy). Thus, it indicates the various selections accounted for by attributions. A mean lambda value can be calculated for each grade level, thus indicating the mean reduction in error in predicting selections from attributions.

Consistency. An ANOVA was calculated employing as the independent variable the outcome (success or failure) which was randomly assigned after subjects performed upon their first selection. The dependent variables were the subjects second selection and difference scores reflecting any discrepancy between a subject's first and second selection.

Generalizability. To answer the issues addressed by this question, several factorial ANOVAs each employing grade level, sex, and culture as independent variables were calculated. The dependent variables were scores developed to express the level of congruency between each student's attribution and subsequent task selection. These congruency scores could have the values of 1, 2, or 3, with the highest score reflecting the highest degree of congruency between attributions and task selections. Thus, for example, if the game the individual ranked first exactly matched that individual's attributions, that individual was assigned a score of 3. If an individual's game selection which matched his (or her) attribution was ranked second, that individual was given a congruency score of 2. However, if the game selection ranked first or second by the subject did not match his/her attributional style, that subject was given a congruency score of 1. Using these congruency scores as dependent variables, the variance component for the independent variables were then transformed into generalizability coefficients following Cronbach, et al. (1972) and Golding (1975) in order to show directly the generalizability of attributional self-selection across grade levels, sex, and culture.

Results

Congruency

The lambda statistics employed to determine the predictability of game selections, given knowledge of an individual's attributions, are presented in Table 2, by grade level. Thus, the values presented in Table 2 express the

strength of association between attributions and game selections at each grade level.

Insert Table 2 about here

It becomes quite easy to interpret the values in Table 2 if it is remembered that their interpretation is analogous to the interpretation of r^2xy. The lowest lambda values occur at grades five ($\lambda = .16$) and ten ($\lambda = .16$). It may be noted that to reduce error in prediction by 16% one has to begin with an original correlation of rxy = .40. Thus, the lambda statistics in Table 2, even at their lowest levels, indicate that one can predict quite well a student's specific game selections from attributions. This finding is enhanced by all other values presented in Table 2. These other values range from $\lambda = .38$ to $\lambda = .56$. Since to attain an $r^2xy = .56$ one needs an original correlation of r = .74, the answer to the first research question is that one can well predict student game selections given knowledge of their attributions.

Consistency

The extent to which the above congruency attributions and game selections will occur consistently is presented in Table 3.

Insert Table 3 about here

The ANOVA results presented in Table 3 show that the level of congruency between attributions and game selections was not significantly different between the first and second selections. Likewise, this congruency was consistent regardless of whether success or failure outcomes were experienced by the students after completing the first angle matching task. None of the F-ratios for any of the dependent variables (as shown in Table 3) were statistically significant, even at p = .05 level.

Generalizability

The generalizability coefficients for the independent variables of grade level, sex, and culture for each congruency dependent variables are presented in Table 4 and 5.

Insert Tables 4 and 5 about here

Before describing the results as shown in Table 4 and 5, in terms of the generalizability coefficients, it would be worthwhile to review the meaning of generalizability coefficients of various sizes. Obtaining large generalizability coefficients for a particular independent variable represent high within-level correlations among the congruency scores for that independent variable. Thus, a high generalizability coefficient for the independent variable of "grade level" would mean that within each grade level (5th, 6th, etc.) there was a high degree of similarity of congruency scores, but that there were large differences in congruency scores across grade levels. Thus, all discussions or statements concerning attribution-game selection congruency would have to be made specific to each grade level. This high generalizability coefficient would thus indicate that there was a high degree of generalizability of congruency across all other non-grade level factors included in the study (e.g. sex, culture, individuals). However, a low generalizability coefficient for a particular independent variable would indicate a lack of specificity in congruency for that particular independent variable. This is because a low generalizability coefficient would express the lack of congruency score variance accounted for by that particular independent variable of interest. A low generalizability coefficient for a particular independent variable would thus mean that statements concerning congruency could be generalized (and not made specific to) across the levels which compose the independent variable of interest. The results presented in Table 4 are now readily interpretable.

The results presented in Table 4 and 5 indicate that there is no large amount of congruency score variance accounted for by grade level, sex, or cultural differences. In fact only a very minimal amount of dependent variable variance is accounted for by these variables. Thus, any statements concerning the congruency between attributions and game selections can be generalized across the various grade levels, sexes, and cultures represented in this study.

However, the results presented in Table 4 and 5 clearly indicate that the major proportion of dependent variable variance is accounted for by individual differences. The results of Table 4 and 5 show that upwards of 85% of congruency score variance is accounted for by individual differences. Thus, the congruency between attributions and game selections is highly generalizable across grade levels, sex, and culture but specific to each individual.

Discussion

The results indicate a clear congruency between success attributional tendencies and task selection. Apparently, individuals do choose tasks which match or are congruent with certain personal biases they hold; in this case, biases in interpretating personal causation. Thus, given information on an individual's tendency to attribute causes for success, it was possible to predict which task the students later selected. Of equal importance is the finding that this predictability is quite consistent across repeated observations and unaffected by task outcome. Moreover, the self-selection bias seems to be quite pervasive and generalizable. Attributional self-selection seems to occur at approximately the same level for both males and females, in both rural and urban settings, and

in fifth through twelfth grades. These findings are important from several different perspectives and both theoretical and practical implications can be drawn from them.

As far as theoretical implications are concerned, it is important to note that the findings of the study further substantiate a concept of organismic self-selection proposed by Stagner (1974; 1976), Wachtel (1973), and Bowers (1973). In particular, they suggest that attributional bias may be a critical factor in self-selection. Beyond this, it is of some interest to note that the largest proportion of the variance is associated with individual differences and is not specific to sex, culture, or age. It seems quite clear that in this case it was the individual's achievement style, apart from normative patterns, that was critical in the determination of task selection. Incidentally, it is of some interest to note that when the focus is on attributing and evaluating the behavior of others normative, sociocultural, factors are perhaps more likely to be exhibited. In an attempt to identify attributional tendencies which may be at the bases of individual achieving orientations, subjects are sometimes asked to evaluate the behavior of others (see for example, Weiner & Peter, 1973, Salili, Maehr, and Gillmore, 1976). Quite possibly, such "other attributions" operate quite differently than "self-attributions." Possibly, normative, sociocultural factors supercede individual difference factors in this instance. Thus Salili, Maehr and Fyans (Note 1), in a study with Iranian students, found that individual difference factors were relatively unimportant in accounting for the judgments made. The point is that it is possible--maybe even likely--that the assignment of causes to others is normatively determined, highly regularized

and culturally defined. In contrast, assigning causes to self may be highly particularized, thereby allowing individualistic style to play a major predictive role. It is also possible that the minimal importance of individual differences in the Iranian study is in part due to cultural differences. Cultures, such as tend to be dominant in Iran, are likely to be much more hierarchical and authoritarian than the cultures from which U.S. subjects might be drawn. Moreover, children are generally allowed much less freedom of action and initiative in differing cultures. Therefore, individual differences are more likely to explain variance in a study involving U.S. than Iranian subjects.

In any case, these comparisons raise a number of interesting questions. Perhaps the stress on individual differences and self-selection is appropriate in a cultural context where stress is placed on the importance of the individual but it may well prove less important in other cultures. Furthermore, if attributing causes is culturally determined, one might well expect that persons from differing cultures will show different selection patterns, patterns compatible suggesting that culture (group norm) x situation interactions may occasionally be equally critical as person (individual) x situation interaction in determining task selection in the case of achievement (as well as other types of) behavior.

It is appropriate to ask what, more generally, is the present task situation employed in this study really representative of? Superficially, the task situation employed in this study is not unlike the kinds of situations characteristically employed in studies of achievement behavior. However, the task was termed "a game" for the specific purpose of de-emphasizing the external pressure and with a view to giving "intrinsic interests" full opportunity to be realized.

In viewing these facts, it may first of all be stated that the patterns of results are most likely to be applicable to what Maehr (in press) has defined as "play" situations; situations where external evaluations and intrinsic rewards are minimal and where also intrinsic factors are dominant. We hasten to emphasize, however, that this in no way suggests that the present experimental situation represents an unimportant one as far as achievement behavior is concerned. Perhaps we have typically confined achievement motivation and achievement behavior to those situations which are replete with external evaluations. The more recent interest in the social psychology of intrinsic motivation (e.g., Deci, 1975) has suggested that this is too narrow a perspective. Indeed, as far as achievement in an applied setting, such as school, is concerned, it is perhaps most appropriate to focus on how one chooses and performs when there are not external pressures (cf. Maehr, 1976; 1977). After all, when educators state their goals, they typically stress the hope that students will develop autonomous and independent interests in learning. Thus, it logically becomes important to consider how students choose and perform when evaluation is minimized--as was the case in this particular study.

Of course, it follows that it is likewise important to observe performance and preference under non-game like conditions. To some degree this has been done. Maehr and Stallings (1972) and Salili, Maehr, Sorenson and Fyans (1976) have found that, overall, children will tend to exhibit a lowered inclination to freely elect to perform a task when they have previously attributed their success or failure on that task to external reasons. However, the present study forces several questions in this connection. When choosing tasks to be performed under external evaluation conditions (or under conditions when intrinsic rewards are

administered) how will persons choose and/or perform? Will individual differences and attributional biases be equally important?

Finally, it is obvious that future studies of attribution and self-selection should consider failure, as well as success, attributions. Including failure attributions in the present study would doubtless have strengthened and enhanced the attribution--self-selection relationships which were found. Moreover, one may speculate that the role of failure attributions might be of special importance in a strongly evaluative...rather than game-like...situation.

Conclusion

This study set out to determine how individual attributional biases may affect task selection in free choice situations. The selection of attribution bias as a focus was prompted by the current importance of this characteristic, particularly in the understanding of achievement behavior. But most importantly the present study proceeds from a belief that any understanding of a complex social behavior, especially achievement, must reach beyond the observation of reactions to imposed conditions, and consider the transactions that individuals initiate. This study by no means represents the ultimate actualization of such a belief. However, it does suggest that the belief is warranted. It also shows that the way a person perceives personal causation may critically determine task selections. The larger picture, yet to be sketched in, is that it is a series of selections from available options over a larger time span that eventuates in socially significant accomplishments and what is termed a "successful career." It is toward the understanding of this larger issue that the present study makes a small, but perhaps important, contribution.

Reference Note

1. Salili, F., Maehr, M. L., and Fyans, L. J., Jr. Achievement and morality: A further consideration of culture, development, and attributional processes (under editorial review).

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Footnotes

[1]This study originally formed the basis of a thesis at the University of Illinois, Urbana-Champaign, a version of which was presented at the 1975 APA convention. The stimulation, assistance and critical comments of Carol Dweck, Martha Fiedler, Harry Triandis, John Nicholls, Maurice Tatsuoka, and Kennedy Hill are gratefully acknowledged.

[2]Requests for reprints should be sent to Dr. Leslie J. Fyans, Jr., Illinois Office of Education, 100 North First Street, Springfield, IL 62707.

[3]It was originally intended that failure attributions would also be considered. However, preliminary work indicated that failure attribution responses in this questionnaire did not allow for the assumption of a normal distribution or scaling and, more generally, presented a curious and uninterpretable picture.

TABLE 1

BREAKDOWN OF SUBJECT SAMPLE RELATIVE TO GRADE, SEX, AND SCHOOL SYSTEM

	School System			
	Urban		Rural	
Grade Level	Male	Female	Male	Female
Grade Five	38	40	54	53
Grade Six	48	41	56	54
Grade Seven	31	30	30	38
Grade Eight	30	30	30	32
Grade Nine	19	5	6	22
Grade Ten	12	12	--	--
Grade Eleven	8	6	--	--
Grade Twelve	9	9	--	--

TABLE 2

MEAN LAMBDA VALUES (λ) FOR EACH GRADE LEVEL

Grade Level	
Grade Five	.1634
Grade Six	.3826
Grade Seven	.5333
Grade Eight	.3033
Grade Nine	.4362
Grade Ten	.1583
Grade Eleven	.5608
Grade Twelve	.3808

TABLE 3

EFFECTS OF RANDOMLY ASSIGNED OUTCOME (SUCCESS OR FAILURE) UPON LEVEL OF SECOND CONGRUENCY SCORE AND CONGRUENCY-DIFFERENCE SCORES

Dependent Variable	SS	df	Mean Square	F Ratio	P (rounded)
Second Task Selected					
Between Ss	.008209075	1	.008209075	.0143	.90
Within Ss	341.68581	554	.61676149		
Difference Score:					
Between Ss	.11111960	1	.11111960	.0947	.75
Within Ss	298.18136	554	1.1739424		

TABLE 4

GENERALIZABILITY COEFFICIENTS FOR CONGRUENCY SCORES AT FIRST SELECTION SITUATION

Congruency Scores	Generalizability Coefficient for Grade Levels	Sex	Culture	Individual Differences
Congruency Score	.007	.003	.002	.93

TABLE 5

GENERALIZABILITY COEFFICIENTS FOR CONGRUENCY SCORES
AT SECOND SELECTION SITUATION

Congruency Scores	Generalizability Coefficient for Grade Levels	Sex	Culture	Individual Differences
Congruency Score	.033	.004	.001	.96